

CLAIMS

What is claimed and desired to be secured by Letters Patent is as follows:

1. A system for coupling a conduit section, which includes:

a coupling with an end, a bore open at the end and an annular rib located within the bore;

a coupling tool including a clamp assembly with a closed position adapted for clamping

the conduit section inside the clamp assembly and an open position adapted for

releasing the conduit section; and

said coupling tool further including a push mechanism adapted for pushing the conduit

section into the coupling bore in engagement with the rib.

2. The coupling system according to claim 1 wherein said push mechanism includes:

a pair of lever arms each having a proximal handle end and a distal end;

said lever arms being pivotally interconnected intermediate their respective ends; and

a pair of said clamp assemblies each mounted on a respective lever arm distal end.

3. The coupling system according to claim 2 wherein each said clamp assembly includes:

a stationary jaw mounted on a respective lever arm distal end;

a movable jaw hingedly mounted on said stationary jaw;

a conduit receiver comprising first and second receiver portions each located on a respective jaw; and

said movable jaw being pivotable between an open position with said receiver portions spaced apart from each other and a closed position with said receiver portions in opposed relation and forming said conduit receiver.

4. The coupling system according to claim 3 wherein each said conduit receiver includes an annular rib with a sawtooth-shaped cross-sectional configuration sloping towards the interior of said coupling tool and including an engagement edge adapted for engaging said conduit.

5. The coupling system according to claim 3 wherein each said clamp assembly includes:

a latch mechanism with a first component mounted on one of said jaws and a second component adapted for tightening on said first component and selectively engaging said movable jaw and retaining same in its closed position.

6. The coupling system according to claim 5 wherein:

said stationary jaw and said movable jaw include respective latch channels, which align

with each other with said clamp assembly in its closed position;

said first component comprises a threaded latch bolt pivotally mounted on said stationary

jaw and located in said latch channels with said clamp assembly in its closed

position; and

said second component comprising a nut threadably mounted on said bolt and selectively

engaging said movable jaw with said clamp assembly in its closed position.

7. The coupling system according to claim 2, which includes:

each said clamp assembly including a transverse passage; and

an alignment rod extending through said transverse passages and slidable with respect to at

least one of said clamp assemblies, said alignment rod being adapted for aligning

said clamp assemblies through the opening and closing of said coupling tool.

8. The coupling system according to claim 2 wherein said coupling includes:
a generally cylindrical tubular configuration with opposite ends and said coupling bore
extending between and open at said ends;
said coupling bore having first and second sections adjacent said coupling ends
respectively; and
each said coupling bore section having multiple said annular coupling ribs with sawtooth-
shaped cross-sectional configurations sloping inwardly and including annular
engagement edges adapted for passing said conduit sections into said coupling
through said coupling opposite ends and retaining same therein.
9. The coupling system according to claim 2, which includes:
a pair of axles each mounted in a respective lever arm distal end and rotatably mounting a
respective clamp assembly, each said axle defining a respective rotational axis
extending from front-to-back with respect to said tool.
10. The coupling system according to claim 1 wherein said coupling
comprises a transparent or translucent material.
11. The coupling system according to claim 1 wherein said coupling
comprises polycarbonate material.

12. A system for coupling first and second conduit sections, which includes:

a coupling with a generally cylindrical tubular configuration with opposite ends and a coupling bore extending between and open at said ends; said coupling bore having first and second sections adjacent said coupling ends respectively; and each said coupling bore section having multiple said annular coupling ribs with sawtooth-shaped cross-sectional configurations sloping inwardly and including annular engagement edges adapted for passing said conduit sections into said coupling through said coupling opposite ends and retaining same therein, said coupling bore including an annular stop located medially therein;

a coupling tool including a pair of lever arms each having a proximal handle end and a distal end;

said lever arms being pivotally interconnected intermediate their respective ends;

said coupling tool further including a pair of clamp assemblies each having a closed position adapted for clamping a respective conduit section inside the clamp assembly and an open position adapted for releasing the conduit section;

each said clamp assembly including a stationary jaw mounted on a respective lever arm distal end, a movable jaw hingedly mounted on said stationary jaw and a conduit receiver comprising first and second receiver portions each located on a respective jaw;

each said movable jaw being pivotable between an open position with said receiver portions spaced from each other and a closed position with said receiver portions in opposed relation and forming said conduit receiver;

each said conduit receiver including multiple annular ribs each having a sawtooth-shaped cross-sectional configuration sloping towards the interior of said coupling tool and including an engagement edge adapted for engaging said conduit;

each said clamp assembly including a latch mechanism with a first component mounted on one of said jaws and a second component adapted for tightening on said first component and selectively engaging said movable jaw and retaining same in its closed position;

each said stationary jaw and said movable jaw including respective latch channels, which align with each other when said clamp assembly in its closed position

each said clamp assembly including a latch mechanism with a first component mounted on one of said jaws and a second component adapted for tightening on said first component and selectively engaging said movable jaw and retaining same in its closed position, said first component comprising a threaded latch bolt pivotally mounted on said stationary jaw and located in said latch channels with said clamp assembly in its closed position and said second component comprising a nut threadably mounted on said bolt and selectively engaging said movable jaw with said clamp assembly in its closed position;

each said clamp assembly including a transverse passage;

said coupling tool including an alignment rod with opposite ends and extending through said transverse passages and slidable with respect to at least one of said clamp assemblies, said alignment rod being adapted for aligning said clamp assemblies through the opening and closing of said coupling tool;

a pair of alignment rod retainers each mounted on a respective alignment rod end; and

said coupling tool including a pair of axles each mounted in a respective lever arm distal and rotatably mounting a respective clamp assembly, each said axle defining a respective rotational axis extending from front-to-back with respect to said tool.

13. A method of coupling a conduit section, which includes the steps of:

providing a coupling with an end and a bore open at the end;

providing an annular rib in said coupling bore;

providing a coupling tool with a clamp assembly;

providing said coupling tool with a push mechanism;

clamping said conduit section in said clamp assembly;

pushing said conduit section into said coupling bore with said push mechanism;

engaging said conduit section with said coupling rib; and

releasing said conduit section from said clamp assembly.

14. The method according to claim 13, which includes the additional steps of:

providing said coupling tool with a pair of lever arms each having a proximal handle end
and a distal end;

pivotally interconnecting said lever arms intermediate their respective ends;

providing a pair of said clamp assemblies and mounting each on a respective lever arm
distal end;

spreading said lever arms to an open position of said tool;

clamping first and second conduit sections with said first second clamp assemblies
respectively;

placing said coupling between said conduit sections;

closing said lever arms;

pushing said conduit sections into said coupling bore; and

releasing said conduit sections from said clamp assemblies.

15. The method according to claim 14, which includes the additional steps of:
providing each said clamp assembly with a stationary jaw and mounting same on a
respective lever arm distal end;
providing each said clamp assembly with a movable jaw and hingedly mounting same on a
respective stationary jaw;
providing each said clamp assembly with a conduit receiver comprising first and second
receiver portions each located on a respective jaw;
placing said conduit sections in said conduit receivers; and
pivoting said movable jaws on said clamp assembly to close same on said conduit sections.

16. The method according to claim 14, which includes the additional steps of:
providing each said conduit receiver with multiple annular ribs each having a sawtooth-
shaped cross-sectional configuration sloping towards the interior of said coupling
tool and providing each said ridge with an engagement edge;
engaging each said conduit section with a respective said rib engagement edge; and
preventing one-way slippage between each said conduit section and a respective clamp
mechanism with a respective said ridge.

17. The method according to claim 15, which includes the additional steps of:
providing each said stationary jaw and movable jaw with respective latch channels;
aligning said latch channels with each other when said clamp assemblies are in their closed positions;
providing each said clamp assembly with a latch mechanism including a first component mounted on one of said jaws and a second component;
tightening said second complements on said first components and engaging said movable jaws; and
retaining said movable jaws in their closed positions.

18. The method according to claim 17, which includes the additional steps of:
providing threaded latch bolts for said first components and pivotally mounted same on said stationary jaws;
locating said latch bolts in respective latch channels with said clamp assemblies in their closed positions; and
providing nuts for said second components;
threadably mounting said nuts on said bolts and engaging said movable jaws with said nuts for retaining same in their closed positions.

19. The method according to claim 14, which includes the additional steps of:
providing each said clamp assembly with a respective transverse passage; and
providing said coupling tool with an alignment rod extending through said transverse
passages and slidable with respect to at least one of said clamp assemblies, said
alignment rod being adapted for aligning said clamp assemblies through the opening
and closing of said coupling tool.

20. The method according to claim 13, which includes the additional step of:
forming said coupling from transparent or translucent polycarbonate material.